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UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* BRIAN G. PAYTON, STAVROS POLYVIOU,  
MARIA N. SCANLON, SHEILA I. SHOLARS,  
and ANDREW SPEAKES

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Appeal 2009-004092  
Application 10/620,857<sup>1</sup>  
Technology Center 2100

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Decided: April 29, 2010

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*Before* JOSEPH L. DIXON, LANCE LEONARD BARRY, and  
JAMES R. HUGHES, *Administrative Patent Judges.*

HUGHES, *Administrative Patent Judge.*

DECISION ON APPEAL

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<sup>1</sup> Application filed July 15, 2003. The real party in interest is International Business Machines Corp. (Br. 1.)

## STATEMENT OF THE CASE

The Appellants appeal the Examiner's rejection of claims 1, 2, 5-19, 22-36, and 39-54 under authority of 35 U.S.C. § 134(a). Claims 3, 4, 20, 21, 37, and 38 have been canceled. The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b).

We affirm.

### *Appellants' Invention*

Appellants invented a query assist tool and method for “graphically representing, creating, modifying and modeling structured language queries.” (Spec. 2, ll. 14-15.) The query assist tool includes a user interface for building and displaying query statements. The user interface displays search conditions and predicates of the search conditions for manipulation by the user to build the query statements. Specifically, a user may select and group predicates, and the interface indicates the grouping by indenting, adjacent positioning, and/or delineating with parenthesis or an equivalent symbol. (Spec. 4, l. 6 to 5, l. 16; 9, l. 25 to 12, l. 14.)<sup>2</sup>

### *Representative Claim*

Independent claim 1 further illustrates the invention. It reads as follows:

1. A query assist tool for assisting a user in creating and/or editing a query statement, the query assist tool having a user interface for building queries and a query model definition

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<sup>2</sup> We refer to Appellants' Specification (“Spec.”) and Appeal Brief (“Br.”) filed July 12, 2007. We also refer to the Examiner's Answer (“Ans.”) mailed October 17, 2007.

to populate a query model instance with elements of the created query statement, the user interface comprising:

means for visually displaying a search condition of a query statement in a first display area; and

means for visually selecting two or more predicates of the displayed search condition for grouping; and

means responsive to selection of the two or more predicates for visually indicating the grouping in the first display area, wherein the means for indicating the grouping further comprises one or more of the group consisting of:

indenting the grouped predicates relative to other predicates of the search condition;

positioning the grouped predicates adjacent to each other; and

delineating the group with parenthesis or an equivalent symbol.

### *References*

The Examiner relies on the following references as evidence of unpatentability:

Banning	US 5,421,008	May 30, 1995
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Goldberg	US 2005/0004911 A1	Jan. 6, 2005
	(filed Sep. 25, 2003, claiming priority to S/N 60/413,914	
		filed Sep. 25, 2002)

Norman Murray, Norman Paton, and Carole Goble, *Kaleidoquery: A Visual Query Language for Object Databases*, pp. 247 – 257, ACM Press, New York (1998) (hereinafter “Murray”).

### *Rejections on Appeal*

The Examiner rejects claims 1, 2, 5-8, 15-19, 22-25, 32-36, 39-42, and 49-54 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Banning and Murray.<sup>3</sup>

The Examiner rejects claims 9-14, 26-31, and 43-48 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Banning, Murray, and Goldberg.

### *Grouping of the Claims*

Appellants argue the patentability of claims 1, 2, 5-8, 15-19, 22-25, 32-36, 39-42, and 49-54 as a group. (Br. 8.) We select independent claim 1 as the representative claim. We therefore treat claims 2, 5-8, 15-19, 22-25, 32-36, 39-42, and 49-54 as standing or falling with representative claim 1. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2007).

## ISSUES

Based on Appellants' contentions, as well as the findings and conclusions of the Examiner, the pivotal issue before us is as follows.

Does the Examiner err in finding the combination of the Banning and Murray references would have collectively taught or suggested "visually indicating the grouping in the first display area" by "indenting the grouped predicates relative to other predicates of the search condition[,] positioning

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<sup>3</sup> We revise this rejection to eliminate canceled claims 3 and 4, and correct a typographical error. The Examiner's actual rejection states that "claims 1-8, 15-19, 2-25, 32-36, 39-42, and 49-54 under 35 U.S.C. § 103(a)." (Ans. 4.) We treat the erroneous statement of the rejection as harmless error.

the grouped predicates adjacent to each other[, or] delineating the group with parenthesis or an equivalent symbol” as recited in Appellants’ claim 1?

## FINDINGS OF FACT (FF)

### *Appellants’ Specification*

1. Appellants’ Specification does not explicitly define “delineating the group with parenthesis or an equivalent symbol.” Appellants’ Specification does, however, explain that: “Grouping is effected by highlighting the desired predicates in window 36 and then clicking on ‘(.)’ button 41. The action of clicking on button 41 again causes the parenthesis and indentation, or similar indicia of grouping, to appear in window 36.” (Spec. 12, ll. 2-5; *see* Br. 3.)

### *Banning Reference*

2. Banning describes a user interface displaying search conditions of query statements and predicates of the search conditions in a window (display area) of the user interface. The user interface displays user selected and user grouped predicates (two or more selected predicates grouped together by a user), and indicates the grouping of predicates by the user. (Col. 8, ll. 19-30; col. 27, l. 63 to col. 28, l. 40; col. 30, ll. 7-31; Figs. 2 (elements 53, 56, & 57), 14, & 15; *see also* col. 5, ll. 62-66, col. 6, l. 50 to col. 7, l. 2; col. 7, l. 30 to col. 8, l. 18; col. 8, l. 54 to col. 9, l. 7; col. 9, ll. 41-56; col. 9, l. 65 to col. 10, l. 4; Figs 3, 4, 5, and 8-13.)

3. Banning describes SQL WHERE and HAVING statements (clauses) – including predicates (col. 9, ll. 41-56; col. 9, l. 65 to col. 10, l. 4) – displayed in windows of the user interface (Row Condition and Having

Condition windows). (Col. 5, ll. 62-66, col. 6, l. 50 to col. 7, l. 2; col. 7, ll. 58-67; col. 8, ll. 19-30; col. 27, l. 63 to col. 28, l. 40; Fig. 2, elements 56 & 57.) Banning explicitly describes visually displaying the WHERE statement, as well as selecting, grouping, distinguishing, and displaying (reverse-videoing) its predicates. (Col. 30, ll. 7-31; Figs. 2 (elements 53, 56, & 57), 14 (elements 572, 574, & 576), & 15 (elements 582 & 584).)

4. Banning describes functions comprising objects representing column names (e.g., YEAR, SALARY, DEPT, JOB), operands (=, >, <), and values that are visually selected, distinguished, and grouped to form grouped predicates. The user interface visually distinguishes the grouped predicates in the user interface Row Cond window (element 56) by displaying the predicates within a rectangular outline linked by line segments to operation nodes (grouping nodes) displayed within oval outlines. The user interface displays the predicates indented from the nodes and from one another. The user interface transforms the grouped predicates of a user interface window (Row Cond window) into the query statement displayed in window 53 – indicated by the nested parenthesis. (Col. 6, ll. 50-57; col. 6, l. 66 to col. 7, l. 2; col. 7, ll. 58-67; col. 8, ll. 19-30; col. 30, ll. 7-31; Figs. 2 (elements 53, 56, & 57), 14 (elements 572, 574, & 576), & 15 (elements 582 & 584).)

## PRINCIPLES OF LAW

### *Burden on Appeal*

The allocation of burden requires that the United States Patent and Trademark Office (USPTO) produce the factual basis for any rejection in order to provide an applicant with notice of the reasons why the applicant is not entitled to a patent on the claim scope sought. *In re Oetiker*, 977 F.2d

1443, 1445 (Fed. Cir. 1992); *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984); *Ex Parte Frye*, 94 USPQ2d 1072, 1075 (BPAI 2010) (Precedential). An appellant has the opportunity on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998), *overruled in part on other grounds*, *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 422 (2007)); *Frye*, 94 USPQ2d at 1075.

### *Obviousness*

A claimed invention is not patentable if the subject matter of the claimed invention would have been obvious to a person having ordinary skill in the art. 35 U.S.C. § 103(a); *KSR*, 550 U.S. at 406; *Graham v. John Deere Co.*, 383 U.S. 1, 13 (1966). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art, (2) any differences between the claimed subject matter and the prior art, and (3) the level of skill in the art. *Graham*, 383 U.S. at 17. *See also KSR*, 550 U.S. at 407 ("While the sequence of these questions might be reordered in any particular case, the [Graham] factors continue to define the inquiry that controls.")

In *KSR*, the Supreme Court emphasizes "the need for caution in granting a patent based on the combination of elements found in the prior art," and states that "[t]he combination of familiar elements according to



known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 415-16. The Court explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*Id.* at 417. The operative question is thus “whether the improvement is more than the predictable use of prior art elements according to their established functions.” *Id.*

## ANALYSIS

### *Rejection of Claims 1, 2, 5-8, 15-19, 22-25, 32-36, 39-42, and 49-54 under 35 U.S.C. § 103(a)*

Appellants contend that the combination of the Banning and Murray references do not individually or collectively teach or suggest “visually indicating the grouping in the first display area” by “indenting the grouped predicates relative to other predicates of the search condition[,] positioning the grouped predicates adjacent to each other[, or] delineating the group with parenthesis or an equivalent symbol” as recited in Appellants’ claim 1 (Br. 10, claim 1). (Br. 5-8.) The Examiner finds that the prior art teaches each feature of Appellants’ claim 1 and maintains that the claim is properly rejected. (Ans. 4-6, 13-16.) Specifically, the Examiner finds that Banning teaches a user interface visually displaying a search condition in a first display area, visually selecting two or more predicates for grouping, and

visually indicating the grouping. (Ans. 4-5.) The Examiner further finds that Banning does not disclose “indentation, adjacent positioning, or delineation by a symbol,” but that Murray teaches indenting grouped predicates. (Ans. 5.) Accordingly, we decide the question of whether the Examiner erred in finding the combination of the Banning and Murray references would have collectively taught or suggested the disputed limitations as recited in Appellants’ claim 1.

After reviewing the record on appeal, we will affirm the Examiner’s rejection for the reasons that follow. While we generally agree with the Examiner’s findings concerning Banning, we disagree with the Examiner’s interpretation of Banning with respect to visually indicating the grouping of predicates. Banning provides a broader disclosure of visually indicating groupings of predicates than the Examiner appreciates. We find Banning describes indenting the grouped predicates relative to other predicates, adjacent positioning of the grouped predicates, and/or delineating the group with parenthesis or an equivalent symbol. Thus, we find Banning describes “visually indicating the grouping in the first display area” by “indenting the grouped predicates relative to other predicates of the search condition[,] positioning the grouped predicates adjacent to each other[, or] delineating the group with parenthesis or an equivalent symbol” as recited in Appellants’ claim 1. Therefore, we need not address the Murray reference in our obviousness analysis, and we conclude that the Banning reference alone would have taught or suggested the disputed limitations.

We note that we apply a somewhat different reasoning than that provided by the Examiner. But, where, as here, the limitations at issue are found in a single reference and the thrust of the obviousness reasoning

remains the same, the Board may rely on a single reference to affirm a multiple reference rejection under 35 U.S.C. § 103(a) without designating it a new ground of rejection. Reliance upon fewer references in affirming a rejection under 35 U.S.C. § 103 does not normally constitute a new ground of rejection. *See In re Kronig*, 539 F.2d 1300, 1303 (CCPA 1976); *In re Boyer*, 363 F.2d 455, 458 n.2 (CCPA 1966); *In re Bush*, 296 F.2d 491, 496 (CCPA 1961); *see also Hyatt v. Doll*, 576 F.3d 1246, 1276 (Fed. Cir. 2009) (“The Board cannot be said to have presented a new ground of rejection simply by elaborating on the examiner’s rejection or by using different words.”).

We begin our analysis by construing Appellants’ claim 1. We determine the scope of the claims in patent applications not solely based on the claim language, but upon giving claims “their broadest reasonable interpretation consistent with the [S]pecification” and “in light of the [S]pecification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004) (citations omitted). Appellants’ claim 1 recites “visually indicating the grouping in the first display area” by “indenting the grouped predicates relative to other predicates of the search condition[,] positioning the grouped predicates adjacent to each other[, or] delineating the group with parenthesis or an equivalent symbol.” We broadly but reasonably construe this limitation to simply mean displaying in a separate area or window (first display area) a grouping of conditional functions (predicates – conditional functions (equations) containing predicate elements that evaluate to TRUE or FALSE with respect to instances in the database) indicated by: (1) indenting with respect to other functions/predicates, (2) adjacent positioning

(positioning near to each other), and/or (3) delineating – describing, or representing by drawn lines or by outlining (Merriam-Webster’s Collegiate Dictionary, Tenth Ed. (2002)) – with parenthesis or an equivalent symbol.

Appellants do not dispute that Banning describes displaying a grouping of predicates in a first display area of a user interface. (Br. 5-8.) And, we find – as did the Examiner – that Banning does describe a user interface displaying grouped predicates in a window of the user interface. (Ans. 4-5; FF 2, 3.) Thus, the issue narrows to whether Banning would have taught or suggested visually indicating a grouping of predicates in the manner recited in claim 1 – i.e., indenting, adjacent positioning, and/or delineating (with parenthesis or equivalent symbol). We find that Banning describes indenting a predicate grouping relative to other predicates, adjacent positioning of predicates in the predicate grouping, and graphically outlining and linking (delineating) the predicates and the predicate grouping, which we find is equivalent to describing the predicate grouping with parenthesis.

Specifically, Banning describes visually displaying an SQL WHERE statement that includes predicates in a Row Cond window (Row Condition window) (element 56) of a user interface. Banning explicitly describes visually selecting, grouping, and displaying (utilizing reverse-video) the statement predicates. The user interface displays the predicate grouping, in Row Cond window (56), by displaying the predicates near one another (adjacent positioning) within rectangular outlines linked by line segments to operation nodes displayed within oval outlines (delineation). The groupings are indented from the nodes and from other predicates. The user interface

transforms the grouped predicates into a nested parenthetical portion of the query statement displayed in window 53. (FF 2, 3, 4.)

Thus, we find Banning expressly discloses adjacent positioning of the predicates in the predicate grouping. We also find that one of skill in the art at the time of Appellants' invention would have understood that the graphically outlined and linked predicates and predicate groupings displayed in Banning's user interface: (1) were indented relative to other predicates; and (2) were delineated. We further find that a skilled artisan would have understood that Banning's delineation was equivalent to describing (delineating) the grouping with parenthesis or an equivalent symbol as recited in Appellants' claim 1 – especially in view of Appellants' disclosure that predicate grouping “is effected by highlighting the desired predicates,” which “causes the parenthesis and indentation, or similar indicia of grouping, to appear in window 36.” (FF 1.) We conclude visually indicating groupings (of predicates) in this manner is tantamount to the predictable use of prior art elements according to their established functions – an obvious improvement. *See KSR*, 550 U.S. at 417.

We are not persuaded by Appellants' contrary arguments that Banning does not teach the disputed features (Br. 5-7), as Appellants do not provide any detailed analysis of the Banning reference. Thus, Appellants have not persuaded us to find error in the Examiner's obviousness rejection of claims 1, 2, 5-8, 15-19, 22-25, 32-36, 39-42, and 49-54.

*Rejection of Claims 9-14, 26-31, and 43-48 under  
35 U.S.C. § 103(a)*

Appellants do not separately argue dependent claims 9-14, 26-31, and 43-48. They instead reiterate their previous arguments made with respect to independent claim 1 – “Goldberg (as with Banning and Murray) fails to disclose means for visually indicating a grouping of two or more predicates . . .” (Br. 8.) We address only those arguments that Appellants present in the Brief. Arguments that Appellants could have made but chose not to make in the Brief are waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

As we previously explained with respect to claim 1, *supra*, we find Appellants’ arguments unpersuasive with respect to the obviousness rejection of claim 1. Accordingly, we affirm the Examiner’s obviousness rejection of claims 9-14, 26-31, and 43-48.

CONCLUSION OF LAW

On the record before us, we find the Examiner did not err in rejecting claims 1, 2, 5-19, 22-36, and 39-54 under 35 U.S.C. § 103(a).

DECISION

We affirm the Examiner’s rejections of claims 1, 2, 5-19, 22-36, and 39-54 under 35 U.S.C. § 103(a).

Appeal 2009-004092  
Application 10/620,857

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

rwk

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